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**Richard** [US/US]; 2000 Fountain Lane, Plymouth, MN  
55447 (US).

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(74) Agent: **BELLES, Brian, L.**; Cozen O'Connor, 1900 Mar-  
ket Street, Philadelphia, PA 19103 (US).

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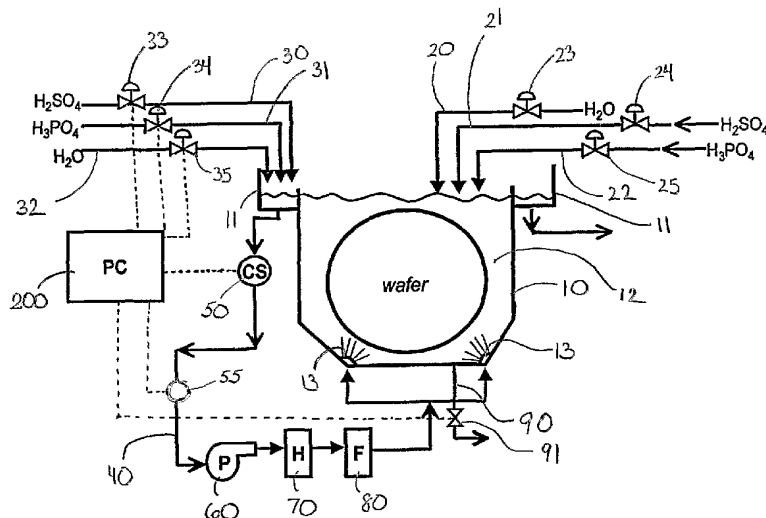
(71) Applicant (*for all designated States except US*):  
**AKRION, LLC** [US/US]; 6330 Hedgewood Drive,  
Allentown, PA 18106 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **KASHKOUSH,**  
**Ismail** [US/US]; 5919 Ricky Ridge Trail, Orefield, PA  
18069 (US). **CHEN, Gim-Syang** [US/US]; 192 Win-  
dermere Avenue, Allentown, PA 18104 (US). **NOVAK,**

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(54) Title: SYSTEM AND METHOD FOR SELECTIVE ETCHING OF SILICON NITRIDE DURING SUBSTRATE PROCESS-  
ING



(57) Abstract: A system (fig.5) and methods for selectively etching silicon nitride in the presence of silicon oxide that provide high selectivity while stabilizing silicon oxide etch rates. The invention comprises a processing chamber (10), dispense lines (20, 21, 22), feed lines (30, 31, 32), a recirculation line (40), a process controller (200), a concentration sensor (50), a particle counter (55), and a bleed line (90). The invention dynamically controls the concentration ratio of the components of the etchant being used and/or dynamically controls the particle count within the etchant during the processing of the at least one substrate. As a result etchant bath life is increased and etching process parameters are more tightly controlled.

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